

CLAIMS

What is claimed is:

1. An apparatus to reproduce AV data in an interactive mode, the apparatus comprising:
 - an AV playback engine that plays back the AV data; and
 - an ENAV engine that interprets and executes a markup document;

wherein, when a key input event corresponding to a user action occurs, the ENAV engine informs, by default, the AV playback engine of the occurrence of the key input event.
2. The apparatus of claim 1, wherein the ENAV engine allows the key input event to occur using first event information written in the markup document.
3. The apparatus of claim 1, wherein the ENAV engine generates an API command to control the AV playback engine, in response to the key input event corresponding to the user action.
4. The apparatus of claim 1, wherein, when a second event occurs using second event information recorded in the markup document, the ENAV engine refrains from informing the AV playback engine of the occurrence of the key input event.
5. The apparatus of claim 1, wherein, when the key input event occurs using the first event information, the ENAV engine transmits a playback control command corresponding to the key input event to the AV playback engine to handle the key input event.
6. The apparatus of claim 1, wherein when an onclick event occurs using the first event information, the ENAV engine transmits a playback control command corresponding to the onclick event to the AV playback engine to handle the onclick event.
7. The apparatus of claim 1, wherein the ENAV engine comprises an interface handler that informs the AV playback engine of the occurrence of the key input event.
8. A playback device, comprising:
 - a reader to read AV data;

an ENAV engine, coupled to the reader, a blender and an AV playback engine, the ENAV engine outputting a key input event signal to the AV playback engine in accordance with user input, receiving a trigger signal from the AV playback engine, sending a control signal to the AV playback engine, and receiving a markup document, verifying, interpreting, executing and sending an interpreted markup document to the blender in accordance with the trigger signal;

the AV playback engine, coupled to the ENAV engine, the blender and the reader, to, upon receiving the key input event signal from the ENAV engine and determining a point in time required to trigger the markup document, send the trigger signal to the ENAV engine, and control play back of DVD-Video data in accordance with the key input event signal from the ENAV engine; and

the blender, coupled to the ENAV engine and the AV playback engine, to blend and output a DVD-Video stream that has been played back with the interpreted markup document.

9. The playback device of claim 8, wherein the AV data includes DVD-Video data and a markup document.

10. The playback device of claim 8, wherein the playback device operates in one of: an interactive mode, a video mode, and a full-screen mode that is a sub-display of the interactive mode.

11. The playback device of claim 8, wherein the playback device fetches a markup document from a network.

12. The playback device of claim 8, wherein one of:

when a first event information is recorded in the markup document and a first event occurs using the first event information, the ENAV engine informs the AV playback engine of the occurrence of the first event;

when a key input event corresponding to a user action occurs, the ENAV engine informs, by default, the AV playback engine of the occurrence of the key input event;

when second event information is recorded in the markup document and a second event occurs using the second event information, the ENAV engine prohibits the AV playback engine from being informed of the occurrence of the key input event corresponding to user action of the second event; and

when third event information is recorded in the markup document and a third event occurs using the third event information when the user input is forwarded directly to or prohibited from being forwarded to the AV playback engine, the ENAV engine performs an operation corresponding to the third event.

13. The playback device of claim 8, wherein the ENAV engine comprises:
a parser and interpreter;
an interface handler, coupled to receive user input, to the parser and interpreter, to the AV playback engine, and to a decoder; and
the decoder, coupled to the parser and interpreter and to the interface handler.